

METHOD AND APPARATUS FOR HIGH-SPEED QUANTIZATION
USING RESONANT TUNNELING TECHNOLOGY

ABSTRACT OF THE DISCLOSURE

An apparatus includes a quantizer circuit having a resonant tunneling device with an operational characteristic that includes a first region of unstable operation, and second and third regions of stable operation. An input terminal and an output terminal are each coupled to one end of the resonant tunneling device. A bias section is coupled to the resonant tunneling device, and responds to a clock signal by alternately operating in a first mode where the resonant tunneling device is forced to operate within the first region, and a second mode where the resonant tunneling device is permitted to operate in either of the second and third regions.